

ABSTRACT

A method is provided for reducing autogenous shrinkage in ultra high-strength concrete in the blending of ultra high-strength concrete with a compression strength in excess of 100 N/mm^2 , comprising the steps of: replacing 30 vol.% or less of coarse aggregate with artificial lightweight aggregate, and blending in a expansive additive in the amount of 30 kg/m^3 of concrete and/or a shrinkage reducing agent in the amount of 4 wt.% or less per unit weight of binder, and thereby bringing the amount of autogenous shrinkage at a curing age of 91 days to $0\text{--}600 \text{ }\mu\text{m/m}$. The artificial lightweight aggregate used has water absorption of 5% or greater and 20% or less, a collapse load of $1000\text{--}2000 \text{ N}$ and a bone-dry density of $1.4\text{--}2.0 \text{ g/cm}^3$.